An X-Band Satellite Ground Station for the State of Louisiana

Annual Report: March 2004

Highlights:

Newly funded LSU Research Projects that use X-Band Facility

The Center for Coastal Zone Assessment and Remote Sensing, NASA Group 3 HBCU University Research Centers, (LSU Earth Scan Laboratory is university partner to Southern University-N. Walker P.I.), April 2003-April 2008, LSU budget $960,000, total award, $ 6,000,000, **funded**.

New remote sensing methodologies for the surveillance of ocean features and improved understanding of circulation processes in the Gulf of Mexico, Minerals Management Service Coastal Marine Institute, (Walker, P.I.), September 2002-August 2005, $346,383, $198,864 match, **funded**.

Assessment and remediation of public health impacts due to hurricanes and major flooding events, LA Board of Regents (Walker, Co-P.I.), April 2002-March 2007, $107,810, **funded**.

Rawinsonding of the atmospheric structure over the Baton Rouge area in the summer 2003, Louisiana Dept. of Environmental Quality, (S.A. Hsu, P.I.), $49,719, **funded**.

Simultaneous measurements of atmospheric visibility, particulate matter, and mixing heights at the Breton area IMPROVE site, Louisiana, Minerals Management Service (S.A. Hsu, P.I.), $299,979, September 2003- September 2006, **funded**.

Graduate Student Awards

Evaristo Liwa, graduate student of Lawrence Rouse, Jr., is using MODIS data for wetland classification for his PhD research. He recently received the Knauss Fellowship and will be spending a year in Washington D.C. at the National Science Foundation, International program office.

Papers published in 2003 using X-band data

O.K. Huh and N. Walker, Remote sensing science and technology: the role of the Earth Scan Laboratory, *Gulf Coast Association of Geological Societies Transactions*, Vol. 53, October 23-24, 2003, Baton Rouge, LA, 2003.

H.H. Roberts, J.M. Coleman, S.J. Bentley and N. Walker, An embryonic major delta lobe: a new generation of delta studies on the Atchafalaya-Wax Lake System, *Gulf Coast Association of Geological Societies Transactions*, Vol. 53, October 23-24, 2003, Baton Rouge, LA, 2003.

Walker, Nan, Oscar Huh, Alaric Haag, Adele Babin, Jaye Cable, Gregg Snedden, DeWitt Braud, David Wilensky and Kota Prasad, A role for remote sensing in managing Mississippi River diversions, *Backscatter*, Association for Marine Remote Sensing, vol. 14, no. 1, 25-28, 2003.

Conference abstracts and talks

Walker, N.D., R.R. Leben, S.P. Anderson, P. Coholan, Circulation and shelf-slope exchange processes associated with Loop Current cyclonic frontal eddies, EOS Transactions, OS31F-04 **(INVITED**), AGU Ocean Sciences Meeting, Portland, Oregon, 26-30 January 2004 (Talk and Abstract).

Roberts, H.H., R.T. Beaubouef, N.D. Walker, G.W. Stone, S. Bentley, A. Sheremet and I. Van Heerden, (paper) Sand-rich bay head deltas in Atchafalaya Bay (Louisiana): Winnowing by cold front forcing, Coastal Sediments '03, 5th International Symposium on Coastal Engineering and Science of Coastal Sediment Processes, Clearwater Beach, Florida, May 18-23, 2003 (Talk).

Huh, O.K, N. Walker, and N. Walker, 2003, Louisiana Office of Emergency Preparedness hosed International Workshop on Environmental Programs for Uzbekistan, May 20, 2003 (Talk).

Reports published in 2003 and 2004 using X-band data

B. Blanchard and S.A. Hsu, Meteorology and air quality observe in Baton Rouge, Louisiana during the 2003 ozone season, Louisiana Dept of Environmental Quality Air Analysis Division, LADEQ CFMS Interagency Agreement NO. 594353, February 2004.

New Collaborations using X-band data

The LSU Earth Scan Laboratory faculty and staff continue to collaborate closely with the Louisiana Office of Homeland Security and Emergency Preparedness providing data and interpretations to officials in times of environmental emergencies including hurricanes, tropical storms, fires, floods.

The LSU Earth Scan Laboratory faculty have established collaborative research with NOAA NESDIS (Dr. William Pichel) in the acquisition and use of Synthetic Aperture Radar (SAR) data in the Gulf of Mexico region. Applications are being developed to map flooding, to detect and track oil spills, ship wakes, river plumes, and high velocity currents.

The LSU Earth Scan Laboratory is collaborating with Dr. Jack Malone, LSU Veterinary Medicine in attempts to apply MODIS data to the prediction of West Nile Virus in Louisiana.